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GENERAL NOTES

Miss Henrietta S. Leavitt, of the staff of the Harvard College Observatory, died on December 12. Since 1902 Miss Leavitt has been engaged in the determination of the photographic magnitudes of the stars. Her careful and extensive investigations in this field and her studies of the distribution of the periods of variable stars form a very important contribution to astronomical science.

Dr. George E. Hale has resigned as President of the Pacific Division of the American Association for the Advancement of Science, on account of duties which require his presence at the meeting of the International Research Council, to be held the coming summer in Brussels. Dr. Barton Warren Evermann, director of the Museum of the California Academy of Sciences, has been elected President of the Pacific Division to succeed Dr. Hale.

Sir William Christie, Astronomer Royal of England from 1881 to 1910, died on January 22 at the age of seventy-six. Entering the Royal Observatory, Greenwich, in 1870 as chief assistant, Christie took an active part in the traditional activity of this institution, that of observing the positions of the Sun, Moon, planets and fundamental stars. Later, as director, his attention was largely devoted to the administrative duties of the office and to increasing the instrumental equipment of the Observatory, thus enabling it to extend its investigations to newer and broader fields.

Professor H. C. Plummer has resigned as Astronomer Royal of Ireland to accept the professorship of mathematics at the Ordnance College, Woolwich.

The Radial Velocities of 594 Stars,¹ by J. S. Plaskett, W. E. Harper, R. K. Young and H. H. Plaskett:—Since the installation of the Dominion Astrophysical Observatory in May, 1918, the resources of this institution have been devoted primarily to the determination of stellar radial velocities, a field of research for which it was most efficiently equipped in instrumental facil-

¹*Publications of the Dominion Astrophysical Observatory*, 2, No. 1.

ities and in the experience and skill of its scientific staff. In order that the new observatory should contribute radial velocity data for which there was the most urgent need, Director Plaskett planned the first program of work with a view to obtaining these data for stars not previously observed. The observing list was composed of stars of north declination, between the fifth and ninth visual magnitudes, chosen from Boss's *Preliminary General Catalogue*, and divided, by coöperative arrangement between Mount Wilson and Victoria. Of the 770 stars thus falling to the Victoria program, 50 of the eighth magnitude or fainter have been delayed for lower dispersion, while 183 have been found to have variable velocities or have spectra unsuitable for radial velocity measures. The present publication contains the radial velocities of 537 stars for which no variation in velocity has been shown by the measures, the velocities of the systems for 22 spectroscopic binaries whose orbits have been determined by members of the staff, and the estimated radial velocities of 35 stars of probable binary character.

The radial velocity for each star depends in general upon the mean of at least six observations, secured with one-prism spectrographs attached to the 72-inch reflector. The two instruments employed have linear dispersions at $H\gamma$ of 34.8 Å and 29 Å per millimeter. For stars whose spectra have sharply defined lines, the probable error of the mean velocity is about ± 0.3 km. and that of a single observation about ± 0.7 km., an order of precision which is highly satisfactory for one-prism dispersion and evidence of the superior quality of the spectrograms obtained with these instruments, as well as the skill and care with which the measures were made.

The program of stars was divided among the observers, each one securing, measuring and reducing the spectrograms of the stars assigned to him. This procedure not only added interest to the work but gave to each observer greater incentive to follow up effectively his stars, and undoubtedly contributed to the efficient manner in which the investigation was conducted.

The radial velocity data contained in the present memoir will be utilized in the determination of the distribution and motions of the stars in space; and by all students of this subject the com-

pletion of the well-planned and carefully executed program, with the prompt publication of its results, will be highly appreciated.

J. H. M.

*Photometric Research of the Stellar Cluster Messier 37:*¹—In the *Proceedings of the Royal Swedish Academy*, Dr. H. von Zeipel and Mr. J. Lindgren give the results from an extensive photometric study of the star group Messier 37 in *Auriga*. The cluster does not belong to the globular clusters, but is a regular open cluster evidently connected with the star cloud of the Milky Way in that constellation.

The instrument used was the Upsala double refractor with a photographic objective of 13 inches and a visual objective of 14.4 inches. Plates were taken simultaneously by using color screens and sensitized plates with the photovisual camera of the refractor. The polar sequence was exposed on every plate with an exposure time equal to that used for the cluster. The plates were measured by using an auxiliary scale in the same way as in the work of Seares and Shapley. The corrections for distance from center were investigated and applied. Corrections also were applied for systematic differences between the two observers and for a seasonal change in the scale readings.

For 2,113 stars photometric or photovisual magnitudes were derived and color indices obtained for 1,885 stars. Assuming the relation between color and spectral class, as derived by Seares, to hold, the authors conclude that 57 stars are giants of Classes G and K and that nearly half of the stars belong to Class A. The F and G dwarfs are numerous, but the M dwarfs are lacking, probably because they are fainter than the 16th magnitude and thus not within reach of the instrument employed.

Assuming that the mass distribution in a star cluster is in accordance with the Maxwell law, the most massive stars ought to be concentrated at the center of the cluster. The authors derive the ratio between the mean masses of the different color classes by studying the distribution of the cluster stars according to their colors. The yellow giants have a mass six times

¹*Kungl. Svenska Vetenskapsakademiens handlingar* 61, No. 15, 1921.

that of a dwarf star with a color-index of $+0^m.80$. For the white stars a mean value of 2.8 is suggested.

Assuming a constant absolute magnitude for stars with color-index corresponding to early spectral classes and G giants, the authors derive a distance of 1,450 parsecs for the cluster. Other previous results for the same object are:

AUTHOR	DISTANCE	METHOD
Shapley	2600 parsecs	Star clusters
Lundmark	1800 "	Luminosity law
Schouten	400 "	" "

These results have also some bearing on the problem of the dimensions of the Galaxy, as the connection between the star group and the star cloud in *Auriga* is unmistakable. Using non-cluster stars observed on their plates, the authors conclude that the distance to the center of the star cloud is somewhat greater than that of the cluster, or 2,300 parsecs.

Popular Astronomy in Sweden:—In Sweden popular interest in astronomy has been continually growing during recent years. Excellent accounts and reviews concerning progress in different branches of astronomy have appeared in the leading newspapers, and a number of popular publications dealing with astronomical problems have been issued. In the illustrated weekly, *Hvar 8 Dag* (Every 8th day), Mr. Corlin writes a series of very interesting articles giving the development of astronomy. Through the courtesy of the directors of the Mount Wilson and Lick Observatories, Professor Barnard and other leading astronomers, these articles are beautifully illustrated with original photographs. The director of the Upsala Observatory, Dr. Bergstrand, is just finishing, in the Swedish language, a historical and methodical presentation of the astronomical results, including the most recent discoveries. In addition different organizations have arranged well-attended lectures, dealing with astronomical problems, and at the universities an increasing number of astronomical students has been noted.

In the year 1919 an astronomical society was founded in Stockholm with a membership consisting of a number of scientists and amateurs. Under the auspices of the society several

lectures have been given and a journal, *Popular astronomisk tidskrift* (Popular astronomical journal), is published.

The society held the second annual meeting in February, this year, at which the following officers were elected: Prof. K. Bohlin, president; Prof. S. Arrhenius, vice president; the premier, H. Branting, treasurer; Dr. N. Nordenmark, secretary, and Prof. V. Carlheim-Gyllensköld, librarian.

At this meeting Dr. Lindblad gave a lecture on the methods for determining the distances of the stars from the behavior of certain lines in their spectra in which an account was given of results obtained during his year spent at the Mount Wilson and Lick Observatories. His investigations will be carried further at the observatory of Upsala.

In accordance with a resolution from the society, the government has taken steps to protect the ruins on the island of Hven of the famous observatories, Uranienborg and Stjärneborg built by Tycho Brahe.

K. L.

An Astronomy Club for Amateurs, proposed recently by Mr. Curt B. Muller of Cleveland, held a meeting for the purpose of acquaintance and organization on Monday, May 13, at the University Club in Cleveland. Mr. Muller made the suggestion in the club notes of Cleveland's leading daily, a few weeks ago, and some forty people of both sexes responded and signified a desire to join the club. Several of the prospective members have telescopes, among them being a 9½-inch refractor, a 5½-inch refractor, several 4-inch, and a Mellish 9½-inch reflector. The club also will have access to the 10½-inch refractor in the observatory of the Case School of Applied Science.